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EXAMINER	
TRIEU, THAI BA	

ART UNIT	PAPER NUMBER
3748	

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/528,657	CANAL, ORLANDO	
	Examiner	Art Unit	
	Thai-Ba Trieu	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 March 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *29-49* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *29-49* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *22 March 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *03/22/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

The Preliminary Amendments filed on March 22, 2005 is acknowledged. Claims 1-28 were cancelled, and claims 29-49 were newly added.

Information Disclosure Statement

The listing of references in the specification (See Page 2, lines 21, 24, 25 and 27) is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character ***"M2"*** has been used to designate ***"length as defined as M2"*** (See Page 5, line 33), ***"spread M2"*** (See Page 5, line 36), and ***"distance M2"*** (See Page 6, line 11). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the

changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character ***"M1"*** has been used to designate both ***"afore-defined distance M1"*** (See Page 7, line 23), and ***"spread M1"*** (See Page 7, line 27), and. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: ***"12"*** and ***"15"*** (See Figure 1); and ***"112", "113",*** and ***"115"*** (See Figure 16). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement-drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the

page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action.

Specification

1. The disclosure is objected to because of the following informalities:

a. On Page 1 of the Specification, -- **BACKGROUND OF THE INVENTION** – should be inserted after the Title.

b. On Page 2 of the Specification, – **SUMMARY OF THE INVENTION** – should be inserted after line 30.

c. On Page 3 of the Specification, – **BRIEF DESCRIPTION OF THE DRAWINGS** – should be inserted after line 25

d. On Page 4 of the Specification, – **DESCRIPTION OF THE EMBODIMENTS** – should be inserted after line 17.

Appropriate correction is required.

2. The disclosure is objected to because of the following informalities:

- On Page 7, line 24, ***"chambers 71 and 14"*** should be replaced by – **chambers 71 and 24** – *(for correcting typo error and maintaining the consistency of the whole specification and drawings).*

Appropriate correction is required.

Claim Suggestions

Applicant is suggested to rewrite or revise the claims as following:

29. [[Rotary]] **A rotary** machine [[, such as engine, compressor, pump or the like,]] comprising:

a stator having an inner cavity with at least an intake port and an exhaust port,

a first rotor, arranged movably in said cavity, having:

at least two bases and at least a peripheral surface;

conduits, which connect at least two faces of said at least a peripheral surface; **and**

a driving shaft extending through said first rotor coaxially therewith; **and**

a second rotor that is firmly joined to said driving shaft eccentrically;

[[characterized in that]] **wherein** said second rotor comprises at least a lobe adapted to be received and accommodated in a complementary manner in a plurality of recesses, in which said conduits terminate.

*(For addressing the rejection of **"such as"** and **"the like"** under 112, second paragraph).*

30. [[Rotary]] **The rotary** machine [[, such as engine, compressor, pump or the like]] according to claim 29, characterized in that said first rotor is a prism,

whose bases are delta-shaped and whose cross-section orthogonally to the axis of rotation, in correspondence of said recesses, is substantially defined as follows:

[[let]] a first equilateral triangle [[be considered]] being along with a second triangle, in which said second triangle is contained in said first triangle with [[the]] **a** barycentre thereof coinciding with [[the]] **a** barycentre of the latter, as well as with [[the]] sides [[thereof]] **of the second triangle** extending parallel to the sides of said first triangle,

[[let]] circumference arcs [[be now]] **being** drawn out between [[all of the]] vertices of said first triangle and externally thereto, with a radius corresponding to [[the]] **a** distance to the farthermost vertex of the second triangle,

[[let]] a first, a second and a third semi-circumference being finally drawn out having the extremities thereof corresponding to the vertices of said second triangle, and extending externally thereto, [[without]] wherein said first, second and third semi-circumferences [[coming ever into]] having **no** contact with said circumference arcs.

*(For addressing the rejection of **"such as"** and **"the like"** under 112, second paragraph; and lack of antecedent basis in claim).*

31. [[Rotary]] **The rotary** machine [[, such as engine, compressor, pump or the like]] according to claim 30, characterized in that [[the]] **a** cross-section of said second rotor is defined substantially as follows:

- [[considering]] one of said first, second or third semi-circumference, [[let]] **and** a fourth and a fifth similar semi-circumferences [[be now]] drawn out, in such a manner that [[the]] diameters of said fourth and fifth semi-circumferences [[may]] belong to a rectangle that does not intersect said same fourth and fifth semi-circumferences, and in such a manner that between a centre of said fourth or said fifth semi- circumference and [[the]] **an** outermost point on the other semi-circumference there is a distance corresponding to the height of the second triangle,

[[let the]] extremities of said fourth and fifth semi-circumferences [[be now]] joined to each other through equal circumference arcs that have [[their]] **a** centre on [[the]] **an** axis of [[the]] **a** segment having the centres of said fourth and fifth semi-circumferences as [[its]] **the/said** extremities, and a radius equal to the height of the second triangle, in such a manner that [[the]] **a** convexity of said equal arcs is so oriented as to face said centres of said fourth and fifth semi-circumferences, in which [[the]] **an** axis of rotation of said second rotor passes through the centre of one of said fourth and fifth semi-circumferences.

(For maintaining consistency in claims, addressing lack antecedent basis in claim, and addressing the rejection of "may belong" under 112, second paragraph).

32. [[Rotary]] **The rotary** machine [[, such as engine, compressor, pump or the like]] according to claim 5, characterized in that [[the]] **a** cross-section of the stator is symmetrical and defined substantially as follows:

[[let]] a first arc of a circumference be described with the centre thereof at a vertex of said second triangle and the radius thereof corresponding to the distance of said vertex of said second triangle to a farthermost vertex belonging to said first triangle,

[[considering the]] **a** circle, in which said second triangle is inscribed, [[let now the point be identified, at which]] said circle intersects the height of said first triangle passing through said vertex of said second triangle **at an intersection point**,

[[let]] a second arc be drawn out having [[its]] **a** centre at said intersection point and a radius corresponding to the distance of said vertex of said second triangle to a farthermost vertex belonging to said first triangle,

[[let now]] a third and a fourth arc of a circumference, equal to each other, be drawn out externally to said first triangle, with the centres thereof situated at said vertex of said second triangle and said [[point of]] intersection **point**, respectively, and with a radius corresponding to the distance of said vertex of said second triangle to the nearest vertex of said first triangle, so that they *(they should be replaced by components/elements)* intersect said first and said second arc,

[[let finally]] a fifth and a sixth arc of a circumference, equal to each other, be drawn out with the centre thereof on the segment having the intersections of said first and said second arc with each other as its extremities, and with a radius corresponding to the distance of said vertex of said second triangle to the nearest vertex of said first triangle, so that said fifth and said sixth arc of a circumference are tangent to said first and said second arc at the extremities thereof.

(For maintaining consistency in claims, and addressing lack antecedent basis in claim).

33. [[Engine]] **The rotary machine working as an engine** according to claim 32, characterized in that said conduits inside said first rotor are in the shape of a mixtilinear rectangle in [[their]] **a** cross-section **of said conduits**.

(For maintaining consistency in claims, and addressing lack antecedent basis in claim).

34. [[Engine]] **The rotary machine working as an engine** according to claim 32, characterized in that said second rotor comprises internal conduits for carrying cooling and lubrication media.

(For maintaining consistency in claims).

35. [[Engine]] **The rotary machine working as an engine** according to claim 32, characterized in that between contiguous ones of said recesses of said first rotor there are provided sealing means.

(For maintaining consistency in claims).

36. [[Engine]] **The rotary machine working as an engine** according to claim 32, characterized in that along the perimeter of the bases of said first rotor there are provided guides associated to rollers that are attached to the stator and dampened by elastic means.

(For maintaining consistency in claims).

37. [[Engine]] **The rotary machine working as an engine** according to claim 36, characterized in that sealing means are provided along [[the]] **a** border of said guides (88).

(For maintaining consistency in claims, and addressing lack antecedent basis in claim).

38. [[Engine]] **The rotary machine working as an engine** according to claim 32, characterized in that sealing means are provided at [[the]] corners of the peripheral surface and along [[the]] a perimeter of [[the]] bases of said rotor.

(For maintaining consistency in claim, and addressing lack antecedent basis in claim).

39. [[Engine]] **The rotary machine working as an engine** according to claim 32, characterized in that at least an injector and/or at least a heater plug and/or at least an igniter plug are debouching at the surface of said inner cavity.

(For maintaining consistency in claims).

40. [[Engine]] **The rotary machine working as an engine** according to claim 32, characterized in that a valve is provided in the proximity of the at least one exhaust port.

(For maintaining consistency in claims).

41. [[Compressor]] **The rotary machine working as a compressor** according to claim 32, characterized in that in the inner cavity of the stator there is provided at least a lubricant inlet port situated at a distance from the axis of rotation of the second rotor that is approximately equal to the radius of said fourth or fifth semi-circumference.

(For maintaining consistency in claims, and addressing lack antecedent basis in claim).

42. [[Compressor]] **The rotary machine working as a compressor** according to claim 32, characterized in that said at least a lubricant inlet port is provided along an axis of symmetry of the stator.

(For maintaining consistency in claims).

43. [[Compressor]] **The rotary machine working as a compressor** according to claim 32, characterized in that on said [[internal]] conduits in said first rotor there are provided check valve means.

(For maintaining consistency in claims).

Note that if applicant ants to use the term of ***"internal conduits"***, applicant should apply this term in claims 29 and 44).

44. [[Compressor]] **The rotary machine working as a compressor** according to claim 43, characterized in that said check valve means comprise a half- sphere housed in a cavity that is complementary to said half-sphere and provided at the outlet of said conduits, in which said half-sphere is retained by an elastic cord surrounding the first rotor, and in which said cord is contained in a groove provided in the peripheral surface of said first rotor.

(For maintaining consistency in claims).

45. [[Compressor]] **The rotary machine working as a compressor** according to claim 32, characterized in that between [[the]] contiguous recesses of said first rotor there are provided sealing means.

(For maintaining consistency in claims, and addressing lack antecedent basis in claim).

46. [[Compressor]] **The rotary machine working as a compressor** according to claim 29, characterized in that along [[the]] **a** perimeter of [[the]] bases of said first rotor, there are provided guides associated to rollers that are attached to the stator and dampened by elastic means.

(For maintaining consistency in claims, and addressing lack antecedent basis in claim).

47. [[Compressor]] **The rotary machine working as a compressor** according to claim 32, characterized in that sealing means are provided along [[the]] **a** border of said guides.

(For maintaining consistency in claims, and addressing lack antecedent basis in claim).

48. [[Compressor]] **The rotary machine working as a compressor** according to claim 32, characterized in that [[searing]] **sealing** means are provided at [[the comers]] corners of the peripheral surface and along the perimeter of the bases of said first rotor.

(For maintaining consistency in claims, correcting typo errors and addressing lack antecedent basis in claim).

49. [[Compressor]] **The rotary machine working as a compressor** according to claim 32, characterized in that at least an inlet port and a delivery port are debouching at the surface of the inner cavity of said stator for the medium to be compressed.

(For maintaining consistency in claims).

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

Claims 29 and its dependent claims 30-49 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1. Regarding claims 29-32, the phrase ***"such as"*** renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

2. Regarding claims 29-32, the phrase "or the like" renders the claim(s) indefinite because the claim(s) include(s) elements not actually disclosed (those encompassed by "or the like"), thereby rendering the scope of the claim(s) unascertainable. See MPEP § 2173.05(d).

3. In claim 31, the recitation of "may belong" renders the claim indefinite, since it is not clear that under which condition the fourth and fifth semi-circumferences may belong to a rectangle, and under which condition the fourth and fifth semi-circumferences may not belong to a rectangle. Applicant is required to clarify these conditions or revise the claim.

4. In claim 32, the recitation "they" renders the claim indefinite, since it is not clear that which components/elements are to be referenced to. Applicant is required to identify these components and elements.

5. Claim 30 recites the limitations of ***"the barycentre"*** in line 6 and ***"the distance"***, in line 10. There is insufficient antecedent basis for this limitation in the claim.

6. Claim 31 recites the limitations of ***"the cross section"*** in line 2; ***"the diameters"*** in line 5, ***"an outermost point"*** in line 8; ***"their centre"***, ***"the axis"***, and ***"the segment"*** in line 11; ***"the convexity"*** in line 13; and ***"the axis"***, in line 14. There is insufficient antecedent basis for this limitation in the claim.

7. For Claims 32-49, see the claim suggestions set forth above.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Förster et al. (Patent Number 4,943,213), in view of Dugan et al. (Patent Number 3,918,859).

Forster discloses a rotary machine, such as engine, compressor, pump or the like, comprising:

a stator (2) having an inner cavity with at least an intake port (62) and an exhaust port (65),

a first rotor (26), arranged movably in said cavity, having conduits (66),

a driving shaft (12) extending through said first rotor coaxially therewith; and

a second rotor (8) that is firmly joined to said driving shaft eccentrically;

characterized in that said second rotor (8) comprises at least a lobe adapted to be received and accommodated in a complementary manner in a plurality of recesses, in which said conduits (66) terminate (See Figure 2).

However, Forster fails to disclose at least two bases and at least a peripheral surface, and the conduits connecting at least two faces of said at least a peripheral surface.

Dugan teaches that it is conventional in the rotary piston engine art, to utilize at least two bases (56, 58, 60) and at least a peripheral surface, and the conduits (54, 62, 64) connecting at least two faces of said at least a peripheral surface (See Figures 3-5).

It would has been obvious to one having ordinary skill in the art at that time the invention was made, to have utilized at least two bases and at least a peripheral surface, and the conduits connecting at least two faces of said at least a peripheral surface, as taught by Dungan, to improve the efficiency of the Förster device.

Allowable Subject Matter

Claims 30-49 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

The IDS (PTO-1449) filed on March 22, 2005 has been considered. An initialized copy is attached hereto.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Ruf et al. (US Patent Number 5,076,768) discloses a rotary piston compressor.

- Wankel (US Patent Number 4,753,584) discloses a single rotation machine having internal an external rotors.

- Nallinger (US Patent Number 3,255,737) discloses a rotary piston injection engine.

- Campos (US Patent Number 3,173,406) discloses a rotary internal combustion engine.

- Nittka (US Patent Number 3,141,446) discloses a rotary engine.

- Bonavera (US Patent Number 3,117,561) discloses a rotary type power generating or work performing means.

- Wankel et al. (US Patent Number 2,988,065) discloses a rotary internal combustion engine.

- Froede (US Patent Number 2,947,290) discloses a heat generating rotary internal combustion engine.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai-Ba Trieu whose telephone number is (571) 272-4867. The examiner can normally be reached on Monday - Thursday (6:30-5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TTB
August 10, 2006

Thai-Ba Trieu
Primary Examiner
Art Unit 3748